

REMARKS

This Amendment is submitted in response to the Final Office Action dated July 27, 2010. Claims 42-44 and 46-86 are pending in the present application. Claims 42-44, 46-63, 81 and 83-86 are rejected in the present application. Claims 42, 43, 60, 61, 81, 85 and 86 are amended herein. Claims 45 and 57-59 have been cancelled without prejudice or disclaimer. Claims 87 and 88 are newly added. A Request for Continued Examination is submitted herewith. The Commissioner is hereby authorized to charge deposit account 02-1818 for the RCE fee and for any other fees which are due and owing. Applicants respectfully submit that the rejections have been overcome, as set forth in detail below.

The Office Action objected to Claim 58 as being of improper dependent form for failing to further limit the scope of the previous Claim 42. Claim 58 has been cancelled, thus rendering the objection to same moot.

The Office Action rejected Claim 57 under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Claim 58 has also been cancelled, thus rendering the 35 U.S.C. §112, second paragraph rejection to same moot.

The Office Action rejected Claims 42-44, 47-52, and 56-62 under 35 U.S.C. § 103(a) as being unpatentable over WO 00/14819 to Chizawa et al. ("Chizawa") in view of U.S. Patent Pub. No. 2002/0028364 to Kaufmann ("Kaufmann"), U.S. Patent Pub. No. 2002/0190448 to Imamura et al. ("Imamura"), U.S. Patent Pub. No. 2002/0168556 to Leboe et al. ("Leboe"), and U.S. Patent Pub. No. 2003/0022042 to Wells et al. ("Wells"). Claims 46, 54 and 55 are rejected under 35 U.S.C. §103(a) as being unpatentable over Chizawa in view of Kaufmann, Imamura, Wells, and Leboe, as applied to Claims 42, 43, 47 and 48 above, and further in view of U.S. Patent No. 6,277,508 to Reiser et al. ("Reiser"). Claim 53 is rejected under 35 U.S.C. §103(a) as being unpatentable over Chizawa in view of Kaufmann, Imamura, Wells, and Leboe, as applied to Claims 42, 43, 47 and 48 above, and further in view of U.S. Patent Pub. No. 2001/0019793 to Tsuyoshi ("Tsuyoshi"). Claims 63 and 81 are rejected under 35 U.S.C. §103(a) as being unpatentable over Chizawa in view of Kaufmann, Imamura, Wells, and Leboe, as applied to Claim 42 above, and further in view of U.S. Patent Pub. No. 2002/0051898 to Moulthrop Jr. et al. ("Moulthrop"). Claims 83-84 are rejected under 35 U.S.C. §103(a) as being unpatentable over Chizawa in view of Kaufmann, Imamura, Wells, and Leboe, as applied to Claim 42 above, either as evidenced by or in further view of WO 01/54218 to Koschany ("Koschany"). Claims

85-86 are rejected under 35 U.S.C. §103(a) 35 U.S.C. §103(a) as being unpatentable over Chizawa in view of Kaufmann, Imamura, Wells, Leboe, and Moulthrop, as applied to Claim 81 above, either as evidenced by or in further view of Koschany.

Of the rejected claims, Claims 42 and 81 are the sole independent claims. Claim 42 has been amended to recite, at least in part, a fuel cell system including: a power generation unit provided with a conduit for an oxidant gas containing at least oxygen; a heat radiation unit connected to a first side of said power generation unit so as to radiate heat from said power generation unit; a separator included in the power generating unit, the separator including an upper-side portion including fuel conduits, a lower-side portion including oxidant gas channels, and a heat transfer portion formed on the lower-side portion and formed in an area at least substantially corresponding to positions of the fuel conduits and gas channels and extending beyond an outer edge of the upper-side portion to said heat radiation unit; a gas flow unit configured to suck said oxidant gas into a first intake port disposed on a second side of said power generation unit; a cooling unit configured to suck said oxidant gas into a second intake port disposed on the second side of said power generation unit and adjacent to said first intake port; a plurality of temperature detectors which detect a temperature of the power generation unit, the heat radiation unit, and the oxidant gas; and a humidity detector which detects a humidity of the oxidant gas, wherein an amount of moisture located inside the power generation unit and a temperature of the power generation unit are determined based on the temperatures detected by the plurality of temperature detectors and the humidity detected by the humidity detector, wherein when the amount of moisture located inside the power generation unit and/or the temperature of the power generation unit deviate from a stable zone of the power generation unit having a proper moisture content and appropriate temperature, the cooling unit is driven independently from said gas flow unit to return a state of the power generation unit to the stable zone, and wherein when the amount of moisture located inside the power generation unit is superfluous, the superfluous moisture is discharged with air by the gas flow unit. Claim 81 has been amended in a similar manner as Claim 42 to further clarify the structure and positional relationship of the heat transfer portion relative to the air and fuel conduits of the separator, and relative to the heat radiation unit.

Support for the amended claims can be found, for example, in paragraphs [0088]-[0089] of the published application U.S. Pub. No. 2005/0255340. For example, in the fuel cell 1, a separator 70 has a structure as shown in FIGS. 6A and 6B. (See, Specification, paragraph

[0088]). FIG. 6A is a sectional view showing the structure of the separator 70, in which the separator 70 includes an upper-side plate-like portion 71, a heat transfer portion 72 and a lower-side plate-like portion 73, with a sealing member 74 clamped between the upper-side plate-like portion 71 and the lower-side plate-like portion 73 so as to prevent the fuel gas from leaking from the conduits. (See, Specification, paragraph [0088]). The heat transfer portion 72 is formed to extend to the radiation fin 75, for radiating the heat upon power generation from the separator 70. (See, Specification, paragraph [0089]). Further, (with regard to new Claims 87 and 88) the heat transfer portion 72 is formed of a material higher in thermal conductivity than the material constituting the upper-side plate-like portion 71 and the lower-side plate-like portion 73, whereby the heat-radiating characteristics of the separator 70 can be enhanced. (See, Specification, paragraph [0089]). An example of amended Claim 42 is shown below in Figs. 7A-7C.

FIG. 7A

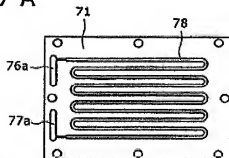


FIG. 7B

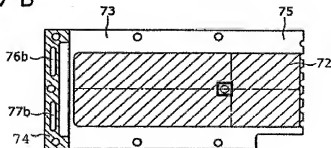
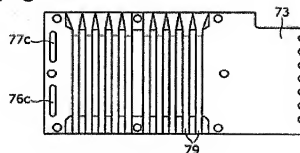


FIG. 7C



The Chizawa, Kaufmann, Reiser, Tsuyoshi, Imamura, Leboe, Moulthrop and Koschany references, even assuming that they are properly combinable in the manner suggested in the office action, fails to disclose or suggest a power generation unit provided with a conduit for an oxidant gas containing at least oxygen; a heat radiation unit connected to a first side of said power generation unit so as to radiate heat from said power generation unit; a separator included in the power generating unit, the separator including an upper-side portion including fuel conduits, a lower-side portion including oxidant gas channels, and a heat transfer portion formed on the lower-side portion and formed in an area at least substantially corresponding to positions of the fuel conduits and gas channels and extending beyond an outer edge of the upper-side portion to said heat radiation unit, as recited in amended Claims 42 and 81.

Accordingly, Applicants respectfully request that the 35 U.S.C. §103(a) rejections of Claims 42-63, 81 and 83-86 be withdrawn.

Moreover, Applicants respectfully submit that new Claims 87 and 88 are allowable over the cited art of record for at least the reasons discussed above with regard to Claims 42 and 81, and for the additional elements recited therein.

For at least the reasons above, Applicants respectfully submit that the present application is in condition for allowance and earnestly solicit reconsideration of same.

Respectfully submitted,

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